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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR  | ATTORNEY DOCKET NO.           | CONFIRMATION NO.       |
|--|-------------|-----------------------|-------------------------------|------------------------|
| 10/816,739   | 04/02/2004  | Andrew Jeremiah Burns | 2003P05056US01                | 1387                   |
| 7590<br>Siemens Corporation<br>Intellectual Property Department<br>170 Wood Avenue South<br>Iselin, NJ 08830 | 07/27/2007  |                       | EXAMINER<br>TURNER, ARCHENE A |                        |
|  |             |                       | ART UNIT<br>1775              | PAPER NUMBER           |
|  |             |                       | MAIL DATE<br>07/27/2007       | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|------------------------------|------------------------|---------------------|
|                              | 10/816,739             | BURNS ET AL.        |
| <b>Examiner</b>              | Art Unit               |                     |
| Archene Turner               | 1775                   |                     |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 05 June 2007.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 2-4 and 6-11 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 2-4 and 6-11 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/07.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5)  Notice of Informal Patent Application

6)  Other: \_\_\_\_\_.

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1. Prosecution on the merits of this application is reopened on claims 2-4,6-11 considered unpatentable for the reasons indicated below:

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 2-4 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The mixed oxide layer is a region of mixed oxide particles that contain zirconium and yttrium dispersed in an alumina matrix, wherein the mixed oxide particles have a size range of less than 100 nm is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). No other description of the mixed oxide layer is enabled in the original disclosure

4. Claims 6-7 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The mixed oxide layer is a region of mixed oxide particles that contain zirconium and yttrium dispersed in an alumina matrix , wherein the mixed oxide particles have a size range of less than 200 nm is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

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5. Claims 8-11 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. A thermal barrier coating comprising a layer of MCrAlY bond coat disposed over a substrate, a layer of thermally grown oxide disposed over the MCrAlY bond coat; a layer of ceramic oxide insulating material disposed over the thermally grown oxide layer; a mixed oxide layer disposed between the layer of thermally grown oxide and the layer of ceramic oxide insulating material, wherein the mixed oxide layer is a region of mixed oxide particles that contain zirconium and yttrium dispersed in an alumina matrix , and wherein the mixed oxide particles have a size range of less than 200 nm is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). No ceramic thermal barrier coating is disclosed in the disclosure without the above structure.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 2-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase “the region of nano-sized features” lacks clear antecedent basis in claim 2, rendering the claims indefinite

8. Claims 2-4,6-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

M in MCrAlY has not been identified, rendering the claims indefinite.

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

10. Claims 2-4, 6-8, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Honeywell International (WO 01/63008).

Honeywell International discloses the claimed substrate, bond coat and oxide layers separated by a particle oxide layer within the claimed size (page 11, line 6). The shape of the oxide may be penny-shaped which anticipated the claimed aspect ratio. The claimed specific surface area is considered inherent.

11. Claims 2-4, 6-11 are rejected under 35 U.S.C. 102(b) as being anticipated by General Electric (EP 1 209 321).

General Electric discloses the claimed substrate, bond coat and oxide layers separated by particulates within the claimed size (column 6, line 3). The shape of

the oxide may be irregular flattened grains (column 5, line 20 –24) and the claimed specific surface area is considered inherent.

12. Claims 2-4, 6-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Rigney et al (6,620,525).

Rigney et al discloses the claimed substrate, bond coat and oxide layers separated by a particle oxide layer within the claimed size (column 5, lines 35-37). The claimed specific surface area is considered inherent.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Archene Turner whose new telephone number is (571) 272-1545. The examiner can normally be reached on Monday, Wednesday through Friday from 10:30 am. to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Please remember to include on the fax, the art unit 1775, serial number and Examiner's name.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**A. A. Turner  
Primary Examiner  
Group 1700**

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